BR comments
Final to follow

TECHNICAL REPORTS- Power Production Economics

General Comments

1. There is a concern with combining the Central Valley Project (CVP) and State Water Project (SWP) impacts. Although we had some general discussions that this approach would be acceptable at a Programmatic level, presenting the results in this manner is very misleading. It is important to remember that the CVP is a net power producer, while the SWP is a net power consumer. Combing the two projects will show up as a net power user and skew impacts. It is important to analyze and document the impacts to CVP preference power customers. For example, one problem with combining the impacts in this way is the cost of the power. The cost of CVP power is based on specific repayment obligations tied to authorizations of the project. Cost of CVP power will also include charges to the CVPIA restoration fund. CVP costs can also be broken into two components - project use and preference customer, which are significantly different than each other. While we are uncertain about how SWP power costs are determined, it is undoubtedly determined very differently than CVP costs. The document should explain the differences.

Another key item that should be analyzed is the effect on peaking energy and capacity available for marketing (total CVP generation less CVP project-use) is of utmost concern. Combining the two projects does not accomplish the objective of identifying the effects to the CVP on-peak generation and project-use load requirements.

Other things to consider are defining each projects specific role, how will new facilities be sized, who will pump on-peak versus off-peak, and how generation and energy use will be split.

2. It appears that DWRSIM is being used to determine generation and project(s) energy requirements, as has been commented on before, DWRSIM is insufficient for this use. It lacks sufficient detail for the CVP (and may for the SWP also). In meetings with CALFED, we were told that their was not sufficient time to modify DWRSIM, and that in lieu of this **water results** from DWRSIM would be used in some type of separate post processor to determine power impacts. This does not appear to have been done.

3. The Impact Assessment is very incomplete and contains significant errors (see specific comments).

SPECIFIC COMMENTS - AFFECTED ENVIRONMENT

Page 1: Generation and Energy Use are shown in the same table and figure. It was agreed that if the two project's impacts are combined for simplification, that no net energy number would be shown. While this has not been done, showing the numbers next to each other essentially does the same thing. Generation and Energy use should be shown in separate tables and figures.

Page 2: Under 3.0 Sources of Information, indicates DWRSIM used as source of information. Please see general comment #2. In addition, much of the data in this section is historic data and not model data.

Page 7: Section 4.2.3 Background on Electric Industry Restructuring, discussion does not include how CVP or SWP is affected, or potential impacts on municipal utilities (including CVP preference customers).

Page 9: Under CVP History, this section gives general background on CVP rates for preference customers, but doesn't discuss project use rates at all. Under SWP History, this section doesn't mention how rates are determined. Consistent types of data should be shown for both projects.

Page 10: Figure 2 shows historic generation. Based on what is shown in this figure, it is hard to believe that the average annual generation shown in Table 1, determined by DWRSIM, is as high as it is. Also, under historic generation, some discussion of CVP bypass at Shasta for Environmental purposes would be useful.

Page 11: Figure 4 shows project energy use. It should be noted that CVP project energy use is a relatively small fraction of the total. It also appears low in this figure. This data should be checked.

Page 12: Figure 5 shows historic Energy Sales. Footnote indicates firm commercial power only. If this is true, numbers seem high for CVP. Does this include purchases made by Western to support commercial load?

Page 13: Under Current Resource Conditions, generation and energy use discussed in same paragraph. Important to keep separate.

Page 14: Table 2 appears to be preference rate for CVP only. Important to note this rate also includes purchase power. It is also worthwhile to present project use rate? No capacity rate shown for SWP, and on previous page indicates SWP does not have capacity rate, yet figure 7 (pg 13) shows capacity sales for SWP. This is a confusing presentation of data.

Pages 15 through 25: Deals with facilities throughout different regions. Since impacts will be discussed on system wide basis, it is unnecessary and confusing to break facilities into regions. In discussions of Surface Water pumping, numerous CVP pumping plants are omitted e.g. Contra Costa in Delta, San Felipe (Pacheco) and Westlands relift in San Joaquin, Corning Canal, Folsom in Sacramento Valley. List of CVP pumping plants needs to be thoroughly reviewed. Level of detail for CVP plants not consistent with SWP pumping plants. Should also include some discussion of non pumping CVP project use even if not large portion of energy use. This would include TC facilities, hatcheries, etc.

Page 2, under section 3.0 Sources of Information: DWRSIM does not have the adequate capability for use in evaluating CVP project-use load. At the July 24 meeting, we learned that

some post-processors are going to be used for processing data from DWRSIM output. It is not clear how it was done.

Page 12, figure 5: The CVP portion of energy for sale cannot be as high as shown. It appears that it may misrepresent additional energy purchases by Western.

Page 14, table 2: illustrates how different the CVP and SWP rates are and the potential economic implications it has to both CVP and SWP power users. Again it elicits the sentiment that the impact analyses should be conducted without combining the two projects.

Page 15-25: Many of the CVP pumping plants are not discussed in the text and possibly are not included in the computation which could lead to underestimating CVP project-use load.

Page 25, under Personal Communication: John Johannis is with the U.S. Bureau of Reclamation, Central Valley Operations Office.

SPECIFIC COMMENTS - ENVIRONMENTAL IMPACTS

Page 2: Heading in Table 1 (and other tables throughout this section) shows units as (000 MWH), believe should be (1,000 MWH).

Page 2: Table 1 shows generation and energy use together. Recommend they be separated.

Page 3: First bullet indicates capacity impacts measured on average annual basis. Capacity is traditionally measured on dry (adverse) condition for hydro facilities, whether a specific dry period, specific dry year, or some accedence/frequency. Believe this would be more appropriate for capacity values, otherwise need explanation as to why this approach (average year) is used.

Page 4: First paragraph indicates that DWRSIM was used for energy generation and project use. Once again, DWRSIM as currently formulated is inadequate for this task.

Page 4: First bullet indicates monthly maximum instantaneous capacity estimated based on average storage. This statement is not true since average monthly storage for an average year is used.

Page 4: Last paragraph indicates impacts to locally-owned hydroelectric facilities downstream of CVP and SWP facilities evaluated in lesser detail. Evaluation was not found in the impact assessment. If CALFED includes alternatives to modify upstream flows or runoff, the limit to downstream impacts only may not be appropriate.

Page 5: Under CVP Power Production and Replacement Costs, there is a discussion of contract 2948A and the statement that power impacts for Western need to be considered relative to this agreement. Impacts are to CVP and customers, not Western. Since 2948A expires in 2004 and is not expected to be renewed and the analysis is supposedly done at the 2020 level, this contract is irrelevant. The document seems to state that in the following paragraph, but is confusing. Need

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to discuss Western's post 2004 marketing plan.

Page 9: Discussion of power values mixes units. Uses both mills and cents/kWh. Since most previous data in $/MWH, should probably use that unit. Mills and $/MWH are essentially analogous.

Page 10: Under discussion of Ancillary Services, indicates value 0.75 cents/kWh used. The following paragraph then indicates that values for ancillary services are assumed for hydro capacity which is not supported by energy only. There is no explanation of what the definition of capacity supported by energy is. How does this relate back to an energy charge for ancillary services. This was not used in the impact assessment further on in the chapter.

It is important to note, that this value for ancillary services is probably applicable to generation only and not project energy use. This may require separate power values to be used for generation and energy use impact assessment, if ancillary services are tied to a melded energy value.

Page 12: Section 5.0 Environmental Impact Analysis states that due to the interrelated nature of facilities throughout the study area, quantitative impacts are developed for the overall study area and not a regional basis. Concur that this is the only valid approach. Yet tables 5 through 7 continue to show the regions.

Pages 17-18: Tables 5 and 6 separate generation and energy use. This is a better approach than previous tables that combined the two items. There is concern that these tables are under the No Action alternative, the statement is made that they are similar to existing conditions. Also, we suggest eliminating Regions from these tables. We assume that the energy generation increase of 10%. Is primarily at SWP recapture plants. CVP generation is expected to decrease if less Trinity water is diverted and as more upstream water rights are developed. This illustrates another problem associated with combining the two projects.

Energy use increased by 45% from existing to No Action. This is hardly similar. Expect that most of this increase is at the SWP and not the CVP. These changes No Action numbers only, illustrates again the need to seriously reconsider combining the impacts for the two projects.

Page 21: Table 8 describes No Action as similar to existing conditions for Generation, Energy Use, and Power Rates. Display of generation and Energy Use were discussed previously, it is inappropriate to display them together. For Power Rates, it is expected that because of deregulation, they will not be similar to Existing Conditions.

Pages 22 and 25: Generation is valued from 2.25 $/MWH to 3.00 $/MWH and Energy Use is valued from 2.60 $/MWH to 3.40 $/MWH. First of all, the values appear off by a factor of 10. This may have occurred when they were converted from cents/kWh shown on page 9.

Secondly, it appears off-peak values are applied to generation and on-peak values were applied to energy use. It is unclear that either one should be 100% on or off peak, but this approach is definitely not valid since both projects try to maximize on-peak generation and minimize on-peak